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STUDENT REPORT
SAFETY IN SUPERVISION - TIME TO MOVE
FROM RHETORIC TO REALITY

MAJOR WILLIAM J. GORMAN, JR. 84-1025

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TO REALITY

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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Shows how the USAF Ground Safety program can be improved by providing increased motivation for safe mission accomplishment on the part of all supervisors, particularly first-level supervisors. Examines current supervisory mishap picture and problems. Contrasts basics of motivation with current safety program practices. Recommends specific program actions to bring practice into conformance with actual motivational needs.		

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PREFACE

The genesis of this project was the frustration the author experienced in trying to administer a truly effective Ground Safety Program while Chief of Safety, 57th Fighter Interceptor Squadron, (FIS), Keflavik, Iceland. There at unit level "where the rubber meets the road", the gap between safety program practices and actual human behavior presented some thought-provoking difficulties not present in the Flight and Weapons Safety disciplines. I hope this product will help solve some of those problems.

My thanks to MSgt Kenneth Bacskai, whose broad supervisory background was most helpful in gradually illuminating these problems during his tenure as 57 FIS Safety NCO. Thanks also go to Mr. Fred Green, 347 TFW/SE, for his useful comments during the development of this paper. And last, but far from least, my thanks to Captain Russ Manning, AFISC/SEG, for his patience and help in providing statistical information.

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ABOUT THE AUTHOR

Major Gorman is a 1976 graduate of the USAF Flight Safety Officer Course. His safety experience includes duty as additional duty Missile/Explosive Safety Officer, 43rd Tactical Fighter Squadron, a temporary duty assignment as Wing Flight Safety Officer for 21st Composite Wing (now 21st Tactical Fighter Wing), and assignment as Flight Safety Officer, HQ Alaskan Air Command (all at Elmendorf AFB, Alaska, between 1975 and 1977). Major Gorman was Chief of Safety, 57th Fighter Interceptor Squadron, Keflavik, Iceland, from 1981 to 1983. He is a Senior Navigator with operational experience in C-141 and F-4 aircraft. Major Gorman received a Bachelors Degree in Civil Engineering from the United States Air Force Academy in 1970 and a Masters Degree in Civil Engineering from the University of Illinois in 1971. Prior to attending Air Command and Staff College in residence, he completed Squadron Officer School and Air Command and Staff College by correspondence.

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REPORT NUMBER 84-1025

AUTHOR(S) MAJOR WILLIAM J. GORMAN, JR. USAF

TITLE SAFETY IN SUPERVISION - TIME TO MOVE FROM RHETORIC
TO REALITY

I. Purpose: To improve the USAF Ground Safety program by increasing supervisory motivation for safe mission accomplishment.

II. Problem: In contrast to the continuing improvement in Flight Safety mishap experience, the USAF faces a continuing and increasing problem in Ground Safety. One very important factor in this problem is a lack of understanding and motivation concerning safety responsibilities on the part of many first level supervisors.

III. Data: The first level supervisor is the key person for the entire effort of the organization, and is tasked with many safety responsibilities which must be faithfully executed if the safety program is to succeed. However, the author and other unit-level Safety personnel have noted problems with motivating supervisors concerning safety; statistics show that recognition of supervisory factors in mishap causation is growing yearly.

A look at the basics of motivation helps us understand the root cause of the problem. The theory which probably best explains this is VIE (Valance, Instrumentality, Expectancy) Theory, which posits that people ask themselves whether or not:
(1) an action has a high probability of leading to an outcome

CONTINUED

(expectancy); (2) that outcome will yield other outcomes (instrumentality); and (3) those other outcomes are valued (valence). Further, valence can be intrinsic (decided by the person--for instance, only you can decide whether you like your job) or extrinsic (pay, promotions, etc--consequences over which the organization has influence). Studies have shown VIE to be a useful model, with valence playing the major role in determining effort. When we look at the current safety program with this in mind, we see a disconnect in that while we place many safety responsibilities on first level supervisors, there are few external rewards for fulfilling them--in other words, a lack of extrinsic valence; we are relying on internal motivation (personal pride in safe mission accomplishment--intrinsic valence) instead--but this will vary from individual to individual.

IV. Conclusion: If we want to improve the safety performance of USAF supervisors, we must increase motivation for safe mission accomplishment. We can do this by rewarding such performance in ways that are important to the supervisors.

V. Recommendations: The governing regulations (AFRs 36-10, 39-62, and 40-452) should be changed to include evaluation of supervisory safety performance (not as a separate factor, but as part of management and supervision). The curricula of USAF Professional Military Education should be changed to include a short block of instruction on supervisory safety responsibilities as part of the leadership studies phase. One or more safety awards for supervisors should be established at USAF and MAJCOM levels via AFR 900-26 and MAJCOM supplements. A "Supervisor's Corner" or equivalent should be established in recurring safety publications.

Chapter One

THE PROBLEM

In contrast to the continuing improvement in Flight Safety mishap experience, the USAF faces an ongoing and increasing problem in Ground Safety. Air Force Inspection and Safety Center (AFISC) statistics for the period Jan 1971 - Dec 1982, show the following trends (32).

On-duty injuries have increased more or less steadily. (With slight declines some years, but an overall increase during the period; see Figure 1.)

While military days of work lost due to mishaps have generally declined, civilian days lost have increased considerably. (See Figure 2.)

Perhaps most significant are the rates per 100,000 manhours exposure, which factor out the fluctuations in workforce size: The military rate has almost doubled during the period, while the civilian rate has quadrupled. (See Figure 3.)

Clearly then, there is a problem. There may be a number of contributing causes, such as increasing task complexity and a less-experienced workforce, but one very important factor is a lack of understanding and motivation concerning safety responsibilities on the part of many first level supervisors throughout the Air Force. The remainder of this chapter will explain why this is so.

IMPORTANCE OF THE FIRST LEVEL SUPERVISOR

Many sources attest to the key position of the first level supervisor, not just for safety but for the entire effort of the organization. According to one author,

Napoleon Bonaparte was reported to have said that the most important man in his army was the field sergeant - the first-line supervisor. Most progressive businessmen feel that the first-line supervisor is the key man in their organization. (5:17)

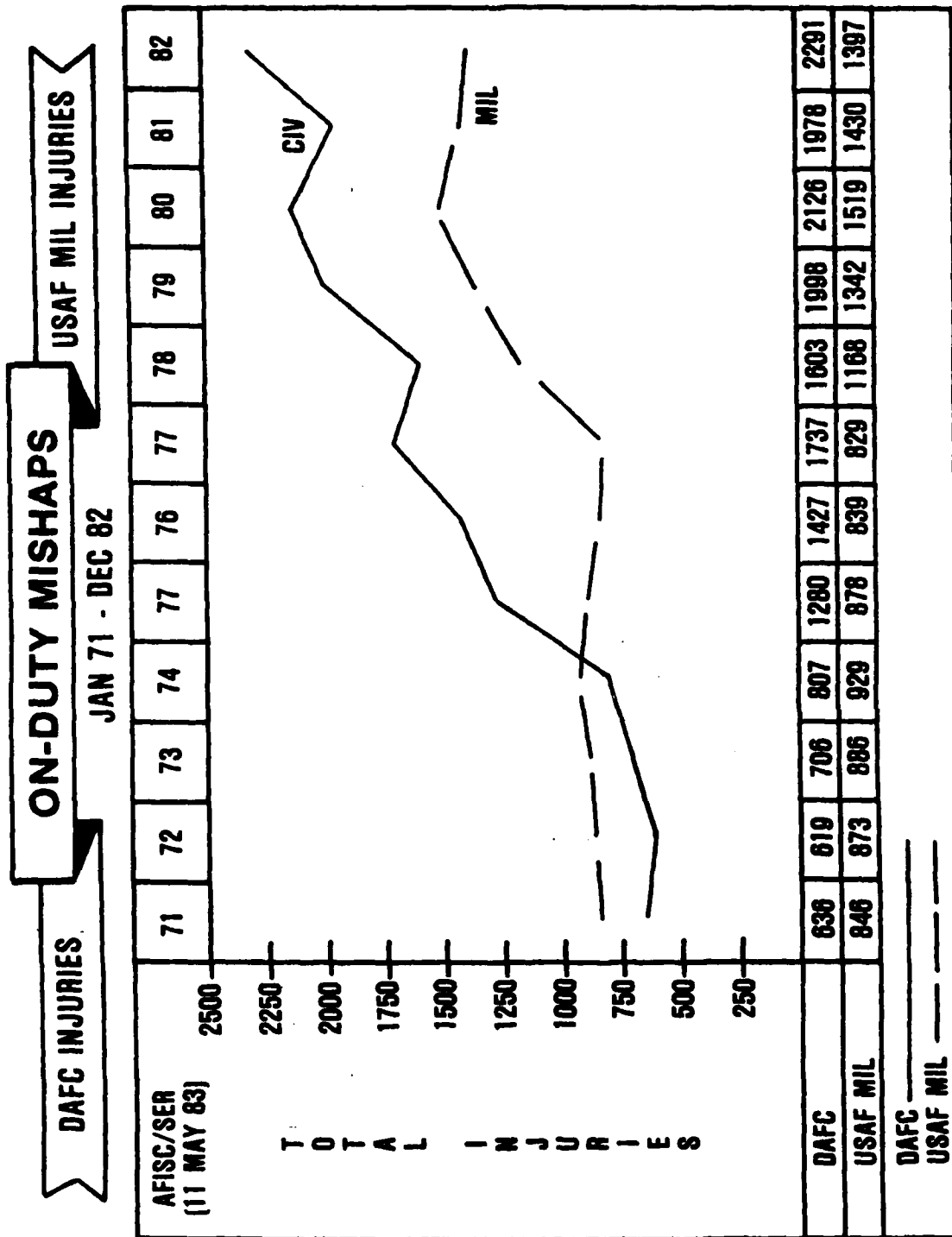


Figure 1. On-Duty Mishap Injuries.

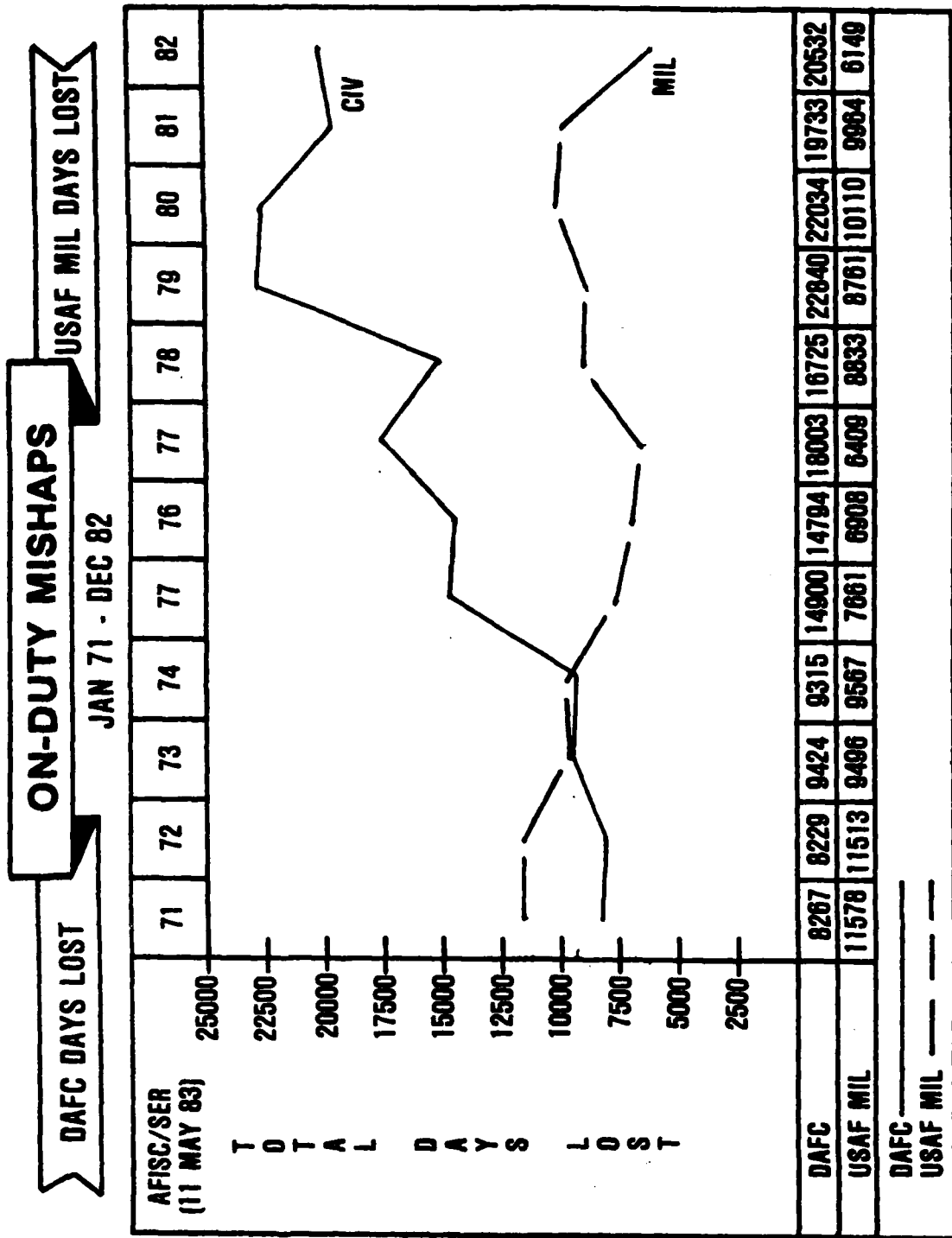


Figure 2. On-Duty Mishap Days Lost.

According to the National Safety Council's Supervisors Safety Manual,

. . . one fact stands out: the biggest part of the job of preventing accidents belongs to the foreman. Establishing work procedures, instructing workers to use safeguards, and supervising to see that they do so are the foreman's responsibilities. (7:9)

There is a very natural reason for the importance of the first level supervisor:

The immediate job of preventing accidents falls upon the supervisor, not because it has arbitrarily been assigned to him, but because accident prevention depends upon the work which a supervisor naturally does in getting out production. (28:24)

The key position of the supervisor is also stated in USAF safety program documents. AFR 127-2, for instance, tasks supervisors with (26:5-3)

Knowing the safety and health standards that apply to their areas

Analyzing job tasks for hazards

Briefing their people on the standards to follow and hazards to avoid

Making sure that all work complies with safety and health standards

Monitoring the job environment for hazards

Exercising control over job tasks to make sure the tasks are done safely

Training their people on safety and health standards, procedures, and requirements of the job tasks

Reporting hazards for prompt abatement

Reporting mishaps and employee absences due to mishaps.

All in all, these represent a comprehensive set of responsibilities. Further, a number of MAJCOM supplements/regulations are even more explicit concerning the importance of supervisors in the safety program. AFCCR 127-1, 8 Mar 83, for instance, states that

Supervisors are the cohesive force in the command structure. They provide the direct link between the commander and the work force. The supervisory level is the point of focus where job training responsibility rests, where realistic safety attitudes develop, and where unsafe practices and conditions are best detected. It is the point where mishap prevention and mission accomplishment come together. (28:2-3)

Similar concepts are expressed in other MAJCOM documents. (25:2-3; 24:11)

This emphasis is not entirely confined to safety regulations. Numerous articles in The Inspector General (TIG) Brief, which has a wider audience, stress the importance of the supervisor. In a 1980 article, for instance, Lt Col Remington, AFISC/SEDT stated:

The supervisor is the key to a safe job; therefore, he or she must constantly strive to achieve safety on the job. Safety must be paramount if the supervisor is to succeed with his or her task. Safety is management's responsibility and they fulfill this requirement by formulating safety policies. The supervisor, however, makes these policies a reality by interpreting and disseminating them to the workers. The supervisor is responsible for doing all that is humanly possible to see that workers have good safety attitudes. (18:20)

TIG Brief article in 1982 and 1983 also explicitly mentioned the supervisor's key role in mishap prevention. (19:20) (20:21)

THE AUTHOR'S EXPERIENCE

The author's experience as Chief of Safety for the 57th FIS amply confirmed for me the truth of these statements. Because the FIS has organic maintenance (in some cases up to intermediate level) with a large number of individual sections (two dozen) and because of my two-year tenure in a largely one-year-tour unit, I observed at close hand the safety awareness, attitude, and performance of a fair number of first level supervisors. I concluded that the first-level supervisors were indeed the key people in our safety program. If they knew and cared about their responsibility for safe mission accomplishment, it was reflected in a number of ways: proper procedures were followed by the workers, protective gear was serviceable and used, hazards were identified and abated (and guarded against until abatement), vigorous corrective action was taken for any mishaps which did occur or for any discrepancies noted during inspections, and

mishaps were promptly reported. Unfortunately, I must add that I can state this so strongly because, all too often in the Ground Safety area (in contrast to the Flight and Weapons Safety areas--for which we were awarded USAF Flight and Missile Safety Plaques for 1981 and 1982), we saw just the opposite: Proper procedures were not enforced; protective gear was unserviceable/not used; hazards were not identified by section personnel, or if identified, were not abated; corrective actions for mishaps/discrepancies were shallow or nonexistent, and mishaps were not reported. What made the difference? The supervisor! And what made the difference in supervisors? Based on my experience again: Whether the supervisor knew, and more importantly, was motivated to carry out his/her inherent safety responsibilities. As we'll see, there can be a number of factors, such as the commander's attitude which affects the first line supervisor's attitude. However, the S7FIS Commander during this same two year period was an outspoken, safety-oriented graduate of the USAF Flight Safety Officer Course--but there were several layers of supervision between him and the first-level supervisors, which may have diluted his personal influence to some extent. In addition, we had supervisors with good safety attitudes and performance alongside other supervisors with poor attitudes and performances.

OTHER OPINIONS

That this problem was not confined to the 57th FIS is evident on several counts. First, most of our supervisors had been supervisors elsewhere; I was in no position to perform statistical analyses at the time, but my personal contacts with the supervisors certainly indicated this. And if they were supervisors elsewhere, it seems unlikely that they would have forgotten everything they knew about safety responsibilities upon arriving in Iceland. Secondly, articles in the TIG Brief indicate the widespread existence of the problem. MSgt Rose (who has contributed a number of safety-related articles to the TIG Brief during the past few years) recently mentioned the necessity for good supervisory example by pointing out the unfortunate results of having workers see the supervisor not using protective equipment or violating safety rules (20:21). Finally, and perhaps most importantly, other unit-level safety personnel agree that this is a problem.

Questionnaire

In an effort to learn how other unit-level safety personnel--those closest to the situation--perceive the problem, I sent out a short questionnaire to eight Wing-Level Safety Officers, each in a different CONUS or overseas MAJCOM; six replies were received (respondents are listed at Appendix B). This was not intended to be a definitive survey on the subject,

but merely a "straw poll" to learn whether my perception of the problem is shared and to see what solutions the unit safety personnel might share. The questions, and summaries of the answers to each, are as follows:

Question: Have you noticed any problems with educating first-level supervisors concerning their safety responsibilities and motivating them to carry out those responsibilities? (Symptoms of inadequate knowledge/motivation may include inadequate corrective actions following mishaps or safety inspections, failure to report on-duty mishaps, lack of initiative in reporting/correcting hazardous conditions, etc.).

Replies: Three respondents answered yes; the other three replies stated or implied that education of the first-level supervisor is not a problem but that motivation is a problem (citing the need for command interest in safety and/or educating higher levels of supervision).

Question: Have you noticed any difference in safety performance or attitude between military and civilian first-level supervisors?

Replies: Five respondents answered "No"; the sixth answered "Yes. Unit's priorities. Mission/Safety," apparently implying that a unit with a higher percentage of military personnel, with a higher priority on direct mission accomplishment, would display a difference in safety performance/attitude among its first-level supervisors compared to a unit with a higher percentage of civilians.

Question: If you have noticed any problems with educating/motivating first-level supervisors to what cause(s) can you attribute it?

Replies: Three respondents stated that it largely depended on the attitude of the commander, while a fourth attributed it to a low priority for safety. The other two attributed it largely to differences in the individual supervisor's attitudes or backgrounds.

Question: Do you think it would be helpful to involve the second-level supervisor as a means of motivating first-level supervisors?

Replies: All answered "Yes" with one stressing the need for highly-motivated second level supervisors and three stating the need for proper attitude and involvement all the way up the chain to the commander.

Question: Can you suggest any other ways of educating or motivating the first-level supervisors?

Replies: Two respondents reiterated the need for command interest, two suggested accountability for safety performance, one mentioned the need for personal involvement, and one stated the need for teaching safety as an integral part of the job.

Question: Any other comments/suggestions for improving supervisor safety involvement.

Replies: Two respondents had no comments/suggestions. One cited the need to improve the attitude of personnel at all levels, while three stated the need for command interest/involvement, with one of these also suggesting the need for education on this subject in Professional Military Education (PME).

Analysis:

While, as previously stated, this was not intended to be a definitive survey, we can profit by noting several general points.

1. All respondents agree that there is a problem with motivating first-level supervisors in their units regarding safety.

2. The majority saw no difference in performance or attitude between civilian and military first-level supervisors. (If a majority had seen some difference, it might have been fruitful to explore the reasons).

3. Causes and suggested solutions largely boil down to command attitude and involvement. Other useful suggested solutions include accountability for safety performance and safety education in PME.

SUPERVISORY MISHAP FACTORS

In an effort to learn more about the problem, I requested AFISC data on supervisory involvement as a mishap cause factor. The data (32) covering a period of almost 6 years (1 Jan 78 - 13 Dec 83) reveals some interesting trends. (The data show the number of times a given factor was identified as a mishap cause during a given year, as well as the total number of mishaps for each year; a given mishap may have more than one mishap cause identified). The raw data for supervisory factors (which constitute only a portion of the overall cause factors) and for total mishaps regardless of cause factor is as follows:

Year:	1978	1979	1980	1981	1982	1983*
Total Mishaps:	4170	4958	5634	5277	5530	4505
<u>Supervisory factors</u>						
Other	14	14	4	12	12	4
Didn't correct hazard	57	60	53	43	44	27
Insufficient personnel training	21	50	52	42	71	66
Didn't inspect work	13	17	16	12	8	14
Didn't notice defect	10	11	7	1	4	6
Overcommitted personnel	14	31	47	46	33	27
Improper briefing	22	22	26	50	38	24
Assigned unqualified personnel	16	3	5	19	20	15
Didn't notice hazard	56	49	71	84	146	123
Didn't supervise personnel	27	40	65	31	51	38
Allowed unsafe tool	7	11	56	60	59	66
Allowed unsafe act	65	91	73	66	35	37
Total supervisory factors	322	399	475	466	521	447
*Through 13 Dec 83						

Table 1.
Raw Data

At first glance, the data might seem to indicate that supervisory factors are not very important (less than 1 factor per 10 mishaps). However, the author's experience indicates that supervisory factors are under-reported for several reasons: (1) Supervisory mishap causes can be difficult to identify. It takes thorough probing to discover the reason behind the worker's unsafe act. (2) Today's stronger emphasis on supervisory mishap factor determination is a relatively recent phenomenon. It takes time to train field investigators (and the unit-level additional duty safety personnel who provide much of their mishap information) on the importance of, and methods for, determining supervisory factors.

The data do not show how many mishaps in each year have one or more supervisory causes identified. However, we can note some interesting trends by looking at the number of times each factor is identified per 1,000 mishaps, and then at the relative frequency of each factor as part of the overall supervisory factor total.

Supervisory Factor	Year:	1978	1979	1980	1981	1982	1983
Other		3	3	1	2	2	1
Didn't correct hazard		14	12	9	8	8	6
Insufficient personnel training		5	10	9	8	13	15
Didn't inspect work		3	3	2	2	1	3
Didn't notice defect		2	2	1	Negligible	1	1
Overcommitted personnel		3	6	8	9	6	6
Improper briefing		5	4	5	9	7	5
Assigned unqualified personnel		4	1	1	4	4	3
Didn't notice hazard		13	10	13	16	26	27
Didn't supervise personnel		6	8	12	6	9	8
Allowed unsafe tool		2	2	10	11	11	15
Allowed unsafe act		16	18	12	13	6	8
Total		77	80	84	88	94	99

Table 2.
Cause Factors Per 1,000 Mishaps

Three factors (Insufficient Personnel Training; Didn't notice Hazard, and Allowed Unsafe Tool) showed marked increases during the period, while two others (Didn't Correct Hazard; and Allowed Unsafe Act) showed declines. The total number of supervisory factors per 1,000 mishaps shows a continuing increase, being 28% higher in 1983 than in 1978. In the author's opinion, this does not mean that supervisors are becoming less competent, but that investigators have in fact gradually become more aware of supervisory factors as part of the mishap chain, as noted in a 1980 TIG Brief article by Lt Col Faulkner, HQ AAC/IGF. (14:17) This (again in the author's opinion--and experience as a unit level safety officer) has been accentuated by the 1981 change to AFR 127-4 which required identification of specific mishap factors, including supervision, for message-type mishap reports; the same logic may gradually be coming into use by investigators in completing all mishap reports. (Note the increase of 6 from 1981 to 1982, compared to the increases of 3, 4, and 4, for 1978-79, 79-80, and 80-81, respectively, and the further increase of 5 from 1982 to 1983--the greater rate of increase may be due to greater scrutiny of supervisory factors). In all likelihood, supervisory factors are still under-reported and the number identified per 1,000 mishaps should continue to grow.

It is also instructive to look at the relative percentage frequency of each factor as a part of the overall supervisory factor total.

Supervisory Factor	Year:	1978	1979	1980	1981	1982	1983
Other		4.3	3.5	0.8	2.6	2.3	0.9
Didn't correct hazard		17.0	15.0	11.2	9.2	8.4	6.0
In sufficient personnel training		6.5	12.5	10.9	9.0	13.6	14.8
Didn't inspect work		4.0	4.3	3.4	2.6	1.5	3.1
Didn't notice defect		3.1	2.8	1.5	0.2	0.8	1.3
Overcommitted personnel		4.3	7.8	9.9	9.9	6.3	6.0
Improper briefing		6.8	5.5	5.5	10.7	7.3	5.4
Assigned unqualified personnel		15.0	0.8	1.1	4.1	3.8	3.4
Didn't notice hazard		17.4	12.3	14.9	18.0	28.0	27.5
Didn't supervise personnel		8.4	10.0	13.7	6.7	9.8	8.5
Allowed unsafe tool		2.2	2.8	11.8	12.9	11.3	14.8
Allowed unsafe act		20.2	22.8	15.4	14.2	6.7	8.3

Table 3
Percentage of Each Factor in Total Supervisory Factors.
(May not total 100% due to rounding errors)

When viewed in this manner, we note declines in four areas (Other; Didn't Correct Hazard; Didn't Notice Defect; and Allowed Unsafe Act) and increases in three (Insufficient Personnel Training; Didn't Notice Hazard; and Allowed Unsafe Tool). The decline in the Other and Allowed Unsafe Act categories hopefully means that investigators are becoming more precise in assigning cause factors (such as indicated by Insufficient Personnel Training and Allowed Unsafe Tool, both of which increased). The simultaneous increase in Didn't Notice Hazard and decrease in Didn't Correct Hazard may mean that investigators are coming to realize that the reason supervisors aren't correcting the hazards is because they don't notice them in the first place! We can further note that the increases (and highest absolute frequencies by 1983) occurred in areas most directly under supervisors' control; the supervisor can't see or control every act by his/her people, but he/she can and should control training, detect hazards, and insure disposal of unsafe tools.

CONCLUSION

The inescapable conclusion is that if this key person does not understand or, even more importantly is not motivated to perform his or her safety responsibilities, the entire program will suffer. All too often the consequences are like that cited by Ikelman in his 1973 study when a commander stated, after he had observed an unsafe act that resulted in an accident and did nothing about it,

I believe my mistake was not simply that I neglected to stop the unsafe act, but rather a kind of creeping complacency toward exercising my responsibility. Most supervisors, at one time or another, experience this type of complacency. How often have you walked by someone who was doing a job half-right or without proper safety equipment or TO's and not said anything? It may have bothered your conscience but still, for some reason that probably wasn't very good, you simply didn't do anything. (28:19)

The result, then, is that "many managers or supervisors think the job of safety belongs to the safety departments alone" (28:30), a situation common to both the Air Force and civilian industry (10:478) and that is the essence of the problem. Now, let us turn our attention first to the root cause of the problem and then to some recommended corrective actions.

Chapter 2

THE CAUSE

Why do we have this problem, especially considering the wide variety of educational media and programs in use today? The answer, and the real root cause of the problem, is that the program, as currently structured, simply does not sufficiently reach or motivate the first level supervisor in the way it must if the program is to be truly effective. To understand this, let us look at the basics of motivation and then contrast this with current practice.

MOTIVATION

The theory which probably best explains the type of behavior we're considering is known as expectance/valency or VIE (Valence, Instrumentality, Expectancy) Theory; it has been gaining credence in management circles in recent years (10:45) (9:80), and studies have shown it to be a useful model for explaining and predicting work-related behavior. (9:77; 1:231) In simplified form, the theory posits that people ask themselves whether or not: (1) an action has a high probability of leading to an outcome (expectancy); (2) that outcome will yield other outcomes (instrumentality); and (3) those other outcomes are valued (valence). (9:73) Let us examine these considerations in more detail (Discussion and diagram adapted from Managing: Toward Accountability for Performance. (1:228-229))

a. Expectancy is a person's perception of the chances that a given level of effort will lead to good job performance, as defined by the organization. For purposes of motivation, it is the person's perception of the effort-performance expectancy that is important.

b. Instrumentality is a person's perception of the chances that a given level of job performance will lead to certain consequences. Once again, it is the perception that is important in motivating behavior. There actually may be a perfect contingency relationship between performance and desired consequences or "reinforcers," but if the person does not perceive this contingency relationship, it will not positively influence the person's motivation.

c. Valence refers to the attractiveness or the intensity of desire for some expected behavioral consequence; it can be positive or negative depending on the desirability of the consequence. Further, there are two types of valence, intrinsic and extrinsic.

(1) Intrinsic valence refers to the intensity or desire for consequences that are intrinsic or internal to the person; they are internally imposed but derived from the job itself. Examples include the valence of the desire for job satisfaction, self-esteem, self-fulfillment, a sense of achievement, and satisfying interpersonal and social relationships. All of these are potential work outcomes; they are controlled by and internal to the person. For example, only you decide whether your job is satisfying.

(2) Extrinsic valence refers to the intensity of desire for consequences that are extrinsic or external to the person; they provide satisfaction that is independent of the job itself; and they are externally imposed and controlled by the organization. Examples include pay, fringe benefits, promotions, office furnishings, assignment to desirable jobs, parking privileges, and so on. These are types of job-related consequences over which the manager has some discretionary influence and which can be used as means for improving job performance.

(3) The concept of valence emphasizes that if consequences are to be useful in motivating individual behavior, they must be "positively valent" to the individual. Consequences the organization thinks are positively valent are not necessarily the same as those the employees view as positively valent. These concepts may be represented by the following diagram:

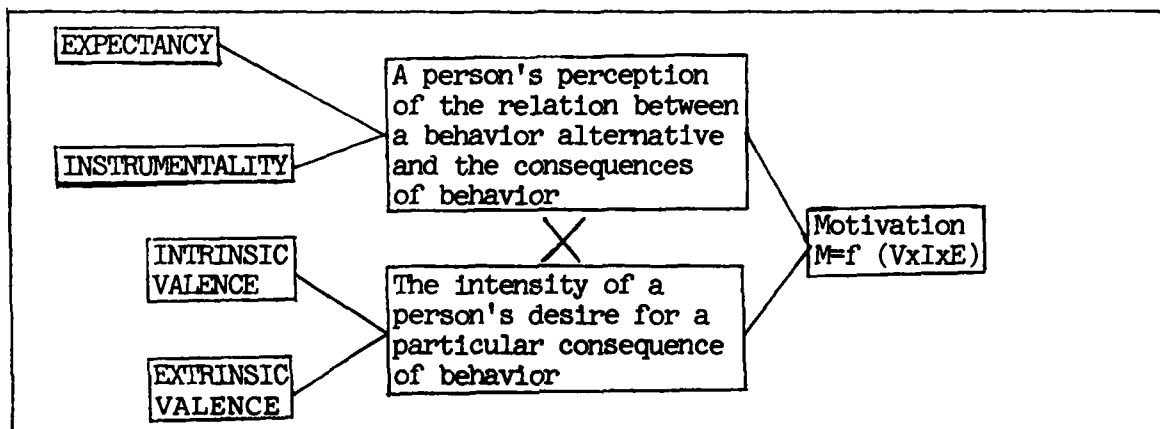


Figure 4
VIE Relationships

It was mentioned earlier that studies have been done to test the validity of the theory, and that the results have been generally favorable. We should also note that the studies have shown two other factors:

a. Effort is predicted more accurately than performance. (This makes sense, because effort is under a person's control but not always performance).

b. Valence (or the attractiveness of outcomes) plays a major role in effort expenditure. It is beginning to appear that valence is not equal to either instrumentality or expectancy in potential impact--its impact is much greater. (9:77)

THE CURRENT PROGRAM

With this background in mind, we are now in a position to see that the problem with the current program is that it does not put a high enough valence (particularly external valence) in safety oriented supervision. Let us look more closely to see why this is so.

Safety Responsibilities

Current regulations (as noted in Chapter 1) place a great many safety responsibilities on the first-level supervisor, but there are few if any extrinsic rewards for the effort put forth. The philosophy seems to parallel that in civilian industry cited by Gellerman:

How is a foreman motivated?

In the event he fails in any of his job responsibilities, he can expect to be severely criticized. However, if he does his job well, it is taken for granted on the principle that after all, that is what he is paid for. (3:26)

Does this seem too harsh an assessment of the USAF? Read this excerpt from a 1980 TIG Brief article authored by researchers at the Leadership and Management Development Center based on their USAF-wide surveys:

More than 25 percent (over 10,000) of the people we have surveyed have indicated they do not know whom they work for, what is expected of them, how to do their job, or how well they've done when it's finished . . . These findings are true for officers, enlisted personnel, and civilians, regardless of their time in service or time in their present career field. (21:10)

If this many people feel that way about their primary job responsibilities it is logical to conclude many more must feel that way about their safety responsibilities which (as we shall see) are often relegated to a lower priority.

Production Emphasis

If safety performance, then, is not given a high valence, what is? The answer, of course, is the production of whatever results the section is tasked for. This situation can and does exist in civilian industry, as cited by Strauss and Sayles:

In many cases, the attitude of the rank and file workers toward safety is a reflection of their immediate supervisor. A worker in a railway freight yard once told the following story:

'There's a company rule that you aren't supposed to cut between cars. If the safety man sees you, he will give you three days off. But the supervisor doesn't care. In fact, when you have to get the number of some cars, that's the only way to get them. If you don't get the numbers, he'll give you time off. And he is more likely to catch you than the safety man.'

In safety, as in other areas of supervision, attitudes of lower levels of the hierarchy reflect the attitudes of top management. To the supervisor operating under the pressure typical of modern industry, maximum production and maximum safety are simply incompatible. (10:479)

The situation also can (and does) exist in the USAF. Several TIG Brief articles in recent years cite or imply the existence supervisory or command influence which emphasized operational requirements at the expense of safety:

In these cases, the people may have an attitude (if only for an instant) that the results (getting the job done) are more important than the means (how the job was done). Commanders and supervisors may have unintentionally fostered that attitude in emphasizing operational requirements without an equal emphasis on safe operations. (15:16)

There's not a single one of us who hasn't observed some infraction of procedures or regulations but, for some reason or another, chose not to correct it--not thinking that we might be contributing to an attitude that will lead to more serious infractions. (13:12)

How does this emphasis occur? Rarely if ever will a senior

or mid-level supervisor tell the first-level supervisor to cut corners or take risks! But there are two ways in which the same result can, in effect, be produced. The first is the tolerance of deviation from safe procedures as referenced above. The other is the fact that rarely will there be praise or reward for delays or lowered output due to concern for safety; this stands in contrast to the Flight Safety area where aircrew members, crew chiefs, or "last chance" personnel who spot a problem and abort a flight (thus momentarily, at least, lowering sortie production) are praised at all levels for their good judgement and initiative. Compare this with the shop supervisor who is going to "feel the heat" for not fabricating parts fast enough with a machine that is malfunctioning. Of course, the potential for serious injury or a spectacular catastrophe are often not as evident in the shop as in the Flight Safety area, but the difference in emphasis is still important.

Safety Staff Inputs

Finally, we must recognize that Safety staff inputs to the first-level supervisor's daily decision making process (such as the Supervisor's Safety Course and work area safety inspections), while important and necessary, do not by themselves motivate the supervisor by adding valence to safety-oriented supervision. This is because (as the author and surely other safety officers, have all too often seen), the safety types are "them" to the supervisor, people who come in and lay on extra responsibilities (as perceived by the supervisor) and who can make life difficult but cannot directly reward the supervisor. Many times I perceived that, while politely listening to me out of deference to my rank and position and agreeing to correct the specific hazard or deficiency in question, the supervisors (even if sincerely, in the abstract, concerned for the welfare of subordinates) would continue to take their cue on safety matters from their superiors and not from the Safety Officer. While this is really the way it should be, the problem is that the cue (for reasons we have seen) is sometimes not what it should be.

Internal Motivation

Of course (and this is important for us to understand), the problem, though widespread, is not universal. There are many safety-oriented supervisors, and almost all supervisors exhibit some concern for safety most of the time. The reason for the variation in effort is (once again in my experience) internal to the supervisor; as mentioned before, valence can be intrinsic or extrinsic; although there is currently insufficient extrinsic valence placed on safety-oriented supervision, many supervisors place an intrinsic valence (out of concern and/or a need to achieve in this area) on such behavior. The causes and

implications of this variation are alluded to by Steers and Porter:

...High n-Ach (need to achieve) employees are motivated by need level to perform. They are "self"-motivated. Other techniques (e.g., closer supervision, incentive systems) may be necessary to a greater extent to ensure good task performance for low n Ach employees. (9:33)

CONCLUSION

We can thus at last see that, at the core at least part of the USAF Ground Safety problem is a lack of extrinsic valence for first-level supervisors regarding safety-oriented supervision. They are tasked with many safety responsibilities which must be faithfully executed if the safety program is to achieve results, but receive few extrinsic rewards for carrying them out. The next chapter will focus on means of increasing that extrinsic valence and hence increasing the motivation and safety performance of first level supervisors USAF-wide.

Chapter 3

SOME SOLUTIONS

As we turn our attention to the measures we can take to increase the extrinsic valence (and hence motivation) for safety-oriented performance for USAF supervisors, let us begin by recognizing that it is all-important to influence supervisors' perceptions concerning command interest in such performance. As Reber and Van Gilder put it:

...the process of motivation always operates within the framework of the individual's perception of the situation. (Original author's emphasis) The manner in which the individual perceives or interprets the situation is just as important as what the situation really is in the motivation of his or her behavior. Perhaps this partially explains why the rank-and-file employees typically see their world as far different from that of their superiors. (8:33)

Furthermore, this process of influencing perceptions must begin at the top and filter down through all intervening levels without being diluted. Blake recognized the importance of this principle when he stated:

The key to selling the supervisory staff lies in the simple fact that any person who values his job tries hardest to accomplish whatever it is that his boss appears to want most. If the boss is sold on safety and makes it clear that it is really one of his chief wants, his foremen will undertake to get it for him. And they will keep up their effort just as long as he keeps on wanting it. (30:54)

To influence these perceptions, top leadership must communicate their interest in safe mission accomplishment to all echelons in the Air Force with emphasis on first level supervisors. This is a common theme in management and motivational literature; for instance, Weger in Motivating Supervisors states,

Because the foreman is the vital and focal person dominating the basic crossroads of the company, management needs to pay untiring attention to the quality of communications that involve the foremen. (11:7)

Another common finding is that lower echelon personnel need and want to know organizational policies and priorities but all too often don't. (12:22) This is because in hiarchical organizations information is often lost when passed downward. One study (a survey of 100 representative business and industrial organizations) cited by Reber and Van Gilder showed a tremendous loss of information as it passes from top management down to the first level supervisors and then to the workers. As shown in Figure 5, first level supervisors receive only about 30% of the original content of the message, while the rank and file receive even less (8:115-116)

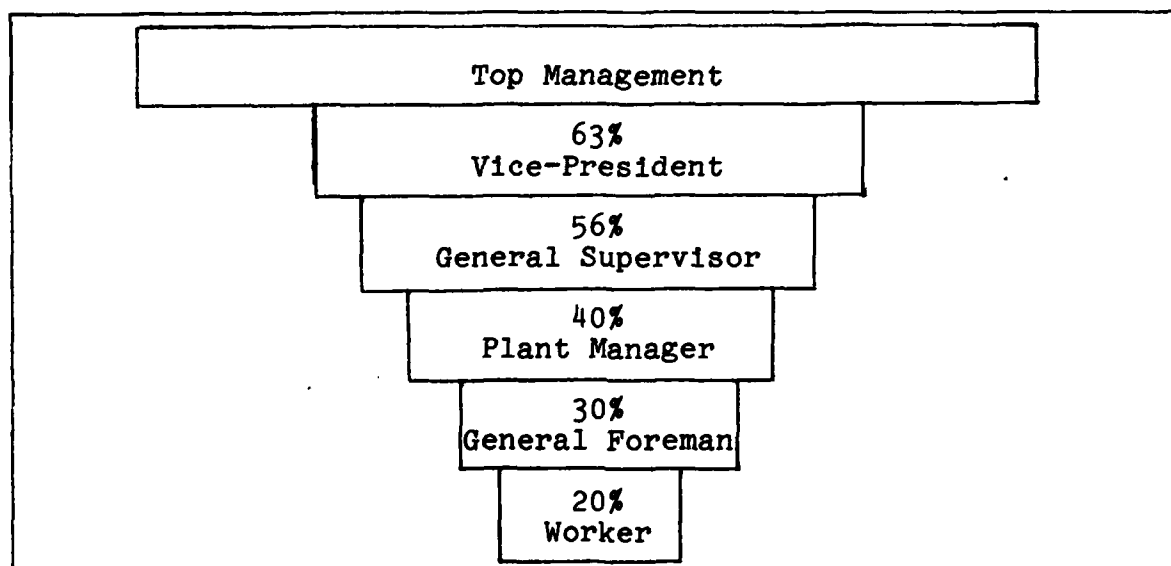


Figure 5
Downward Communications Losses

Thus, if the top leadership of the Air Force sincerely desires that safety be an integral part of day to day operations, they must communicate that desire in a way that will minimize dilution and distortion; furthermore, each echelon must understand and pass on the message. It is also vital that this message not be contradicted by other messages. As Strauss and Sayles put it:

If top management really wants "Safety First," it must clearly indicate that it is willing to pay the possible price in terms of lower production. It must get tough with supervisors who permit the continuation of unsafe practices. Safety records must be consulted in deciding who should get promoted. If management speaks righteously about safety but permits a dangerous condition to persist for "just another few days" so

that no production is lost, it must expect only lip service from everyone down the line. As with affirmative action, policies must be enforced by the reward system. (10:479)

RATING SAFETY PERFORMANCE

Thus, if we wish to increase the supervisor's perception that safety-oriented performance is valued by the organization (and hence provide that external valence), we must reward such supervision (and, as Blake's quotation above implies, we need to do so for each level of supervision). This common sense approach finds support from Landy and Trumbo when they note that "the manager can affect effort-reward probabilities by systematically rewarding good performance." (9:80) For the USAF, one of the best ways to reward safety-oriented performance is via the performance appraisal system (Officer Effectiveness Report, Airman Performance Report, and civilian performance appraisal) for the following reasons:

a. In a large hierarchical organization like the Air Force, a favorable performance appraisal is probably the best institutional way (prompt, positive verbal reinforcement is also vital, but there is currently no way to built it into the system) to provide the two factors which, according to a number of sources, motivate supervisors the best: recognition and achievement. In Motivating Supervisors, Weger, on the basis of his surveys, placed these two factors at the top of the list, each with an intensity for motivation far greater than salary, working conditions, or work itself. (11:63) He noted:

Thus managers must respond to the supervisor's strong need for recognition of the significance of their supervisory position and for recognition of jobs well done. (11:17)

Likewise, the very title of Needell and Alwon's article in the November/December 1982 issue of "Management Review," Recognition and Reward: Key to Motivating Supervisors, conveys the same message. (17:53)

b. Furthermore, for USAF supervisors at all levels, a favorable performance appraisal not only provides written recognition for past performance, but is also the key to advancement both in responsibility and rank. Thus, tying advancement potential at least in part to safety performance would help provide the necessary extrinsic valence (while simultaneously boosting expectancy and instrumentality also!) This general idea was also suggested almost 20 years ago by McCarthy in his unpublished ACSC thesis:

It was stated . . . that failure on the part of the commander to recognize supervisory error as a prime accident cause factor is a weakness in the Air Force Ground Safety Program. DuPont, in contrast, makes a point in rating the supervisor in his use of safety management. DuPont gives an annual efficiency rating to all its supervisors. An integral part of this rating is the supervisor's ability to use safety as a tool of management in his job. The Air Force also gives annual efficiency ratings to all supervisors, however, safety management is not one of the areas rated. (Original author's emphasis) (29:50-51)

This approach was advocated in the National Safety Council's Accident Prevention Manual for Industrial Operations for manufacturing supervisors (probably one of the closest civilian equivalents to the USAF industrial shop supervisors):

The largest motivators for manufacturing supervisors were advancement, responsibility, and growth. This combination indicates a high orientation toward success through administration...This shows, therefore, that the way to reach a manufacturing supervisor with safety programming is not necessarily by increasing his pay but by promoting advancement recognition and growth based upon his past safety record. (6:128)

The same approach has been advocated more recently by Strauss and Sayles (10:479) and in the TIG Brief (16:21). The way to make this a reality is to incorporate safety as a rating consideration in the appropriate regulations and rater instructions. This, incidentally, has already been recommended by AFISC/SEG to the respective regulation Offices of Primary Responsibility (31) and in my opinion ought to be implemented as soon as possible.

SAFETY IN PROFESSIONAL MILITARY EDUCATION

Another important way to improve the perception of supervisors at all levels of the importance of safety-oriented supervision would be to include instruction on this subject in the leadership studies phase at the various levels of Professional Military Education. (It would certainly help to motivate the students if they also knew that safety performance would be a rating consideration in future assignments per the first recommendation!) Ikelman in 1973 (28:44) and Anders in 1978 (27:28-29) in their unpublished ACSC research studies both noted the lack of this as a deficiency in the USAF safety program. As Anders stated:

The personnel in attendance have held or will hold key leadership positions and the curriculums (sic) reflect those anticipated management positions... Yet, none of the curriculums (sic) to include the correspondence and non-resident programs, address accident prevention or safety education that serves as a vital and demanding responsibility within the realm of command and management. (27:28-29)

This deficiency exists today. My queries established that this subject is still not addressed in the curricula of Air War College, Air Command and Staff College, Squadron Officers School, and the Senior NCO Academy. Further, look at this excerpt from ACSC's "Guidelines for Command, a Handbook on the Management of People for Air Force Commanders and Supervisors" dated July 1980. (22:46)

As a commander or supervisor, you are expected to participate in all Air Force safety programs. As a unit commander or supervisor, you are expected to follow to the letter all safety regulations that pertain to your unit. Conduct a safety survey of your unit periodically, and document this, as well as other actions taken to promote safety. (Safety is an item of special interest to the IG).

Participate in? Follow to the letter? Document for the IG? If this is what is being conveyed (and the rest of the section does convey substantially this attitude) to future commanders and leaders as their management safety philosophy, small wonder they fail to understand their key role in safe mission accomplishment. Unless commanders and other senior supervisors understand that they must set the tone of their safety programs, and understand the vital importance of motivating their first level supervisors toward safe mission accomplishment, they will tend to have this non-productive documentation/compliance orientation towards safety. (The handbook is being revised this year, and the author has rewritten the Safety section accordingly).

OTHER METHODS

Supervisory Safety Awards

Still another method of affecting supervisory perception about the importance of safety-oriented performance would be to establish safety awards specifically for supervisors via AFR 900-26 and MAJCOM supplements. While it is true that in civilian industry these awards are often not highly important to their recipients (2:171) they can be more important in the USAF because they provide visibility for favorable performance appraisals, and

if properly publicized provide recognition by themselves. One disadvantage--to be meaningful, the awards would have to be limited to a small number of recipients, but once again proper publicity could help convey the perception about the value of safety-oriented supervision to a much wider audience.

"Supervisor's Corner"

It would also be helpful to establish a "Supervisor's Corner" or equivalent in recurring safety publications. Commanders and safety staffs could use this as a vehicle for educating supervisors about the importance of safety-oriented supervision (especially if safety performance was in fact a rating consideration) and providing recognition of their importance in safe mission accomplishment. This would also be a useful medium for specific safety "how to's" for supervisors and could every few years be the place for publishing a variation of the supervisors' safety checklist at Appendix A. The checklist is adapted from one used by RCA, as included by Halsey in Selecting and Developing First-Line Supervisors. (4:181-182)

CONCLUSION

In summary, Chapter 1 showed the importance of the first level supervisor to the USAF Safety program, the problems we have in motivating them to accept their responsibilities in this area, and the consequences of this lack of acceptance. In Chapter 2, we contrasted basic motivational theory with current USAF safety motivational practices for first level supervisors. And finally, in this Chapter we have seen some recommended changes to bring practice into line with the basics of motivation. If these recommendations are adopted, we will begin to move from rhetoric to reality in motivating supervisors at all levels to accept their inherent safety responsibilities. Because the first level supervisor, in particular, plays such a key role in the safety program, we should then begin to see a real improvement in the USAF ground safety picture.

Chapter Four

RECOMMENDATIONS

1. That the governing personnel regulations (AFRs 36-10, 39-62 and 40-452) be changed to incorporate evaluation of supervisory Occupational Safety and Health (OSH) performance. It should not be necessary to establish a new performance factor, but rather seems most appropriate to include OSH responsibilities with management and supervision performance factors (block III. 4 on AF Forms 707, 910, 911, and block 14 or 15 on AF Form 1287). OPRs: HQ AFMPC/MPKE, HQ AFMPC/MPCYO. (Monitor: AFISC/SEG). (Source: AFISC/SEG letter, 7 September 1983).
2. That the curricula (resident and non-resident) of USAF Professional Military Education (Air War College, Air Command and Staff College, Squadron Officers School and Senior NCO Academy) be changed to include a short block of instruction (one hour) concerning supervisory safety responsibilities in the leadership studies phase; the author is willing to aid in developing the block(s) if this recommendation is adopted. OPRs: AWC/EDRC and EDPC; ACSC/EDC; SOS/EDC; AFSNCOA/EDC. (Initiate/Monitor: AFISC/SE)
3. That one or more safety awards for supervisors be established at USAF and MAJCOM levels via AFR 900-26 and MAJCOM supplements. OPR: AFISC/SEP and MAJCOM/SE or IGF.
4. That a "Supervisor's Corner" or equivalent be established in recurring safety publications. OPR: AFISC/SE and MAJCOM/SE or IGF.

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APPENDIX A

Supervisor's Safety Self-Test

This is adapted (with only minor changes/comments to make it appropriate for USAF situations) from Halsey in Selecting and Developing First-Line Supervisors (4:161-162). It had been used in the Monticello, Indiana Plant of the RCA Victor Home Instrument Division of the Radio Corporation of America, and predates the Occupational Safety and Health Act by at least 15 years. (If this is published for USAF use, suggest checking with the copyright owner for permission.)

Instructions: Below is a list of questions which a foreman might ask him/herself, with a list of answers under each question. Put a check mark in the space provided opposite the answer which you think applies to you. Then add up the figures in front of the checked spaces. This is your score. Look at the bottom to see what it means. You need not show this sheet to anybody else. It is given to help you check on yourself.

I. What do I do when a new person comes on the job in my shop/office?

- 0 - () Take them to the job and tell them to go to work.
- 2 - () Put them to work and tell them to be careful.
- 5 - () Have a little talk with them about safety (OSH briefing) and then put them to work.
- 10 - () Have a little talk with them about safety (OSH briefing) and then take them to their job and give them some pointers on how to do the work safely (OJT).

II. What do I know about USAF and local safety rules?

- 0 - () Nothing
- 2 - () Know a couple of them
- 5 - () Know them pretty well
- 10 - () Know all of them as they apply to my shop/office

III. Do I ever take an hour or so to make a safety inspection of my shop/office

- 0 - () Never
- 2 - () Did it a couple of time in the last four or five years
- 5 - () Generally make such a trip once or twice a year
- 10 - () Do it regularly once a month (or more often)

IV. What do I do when one of my people makes a safety suggestion to me?

- 0 - () Tell them to take it to the safety office and not bother me
- 2 - () Tell them I'll think about it when I have time
- 5 - () Tell them I'll look into it and see what can be done
- 10 - () Tell them I'll go with them as soon as possible and investigate it to see if, together, we can remedy the situation.

V. What can I do when one of my people reports to me with a small injury?

- 0 - () Tell them to get back to work and quit acting like a baby
- 2 - () Bawl them out and then send them for first-aid
- 5 - () Send them or take them promptly for first-aid
- 10 - () Send them or take them promptly for first-aid
Upon their return, find out exactly what caused the injury and try to prevent the same thing from happening again.

MY SCORE:

- 20 or less - Your people probably think that you don't care if they get hurt.
- 21 to 30 - If your people don't think so now, they probably will soon.
- 31 to 40 - Good, keep it up.
- 41 to 50 - Now you're cooking with gas.

APPENDIX B

Questionnaire Respondents

21	TFW/SE	Elmendorf AFB, Alaska	AAC
22	AREFW/SE	March AFB, California	SAC
52	TFW/SE	Spangdahlem AFB, Germany	USAFE
71	FTW/SE	Vance AFB, Oklahoma	ATC
347	TFW/SE	Moody AFB, Georgia	TAC
438	MAW/SE	McGuire AFB, New Jersey	MAC

(No reply was received for a questionnaire sent to a PACAF unit, nor for one sent to an AFLC unit).

This was not intended as a definitive survey, but merely a very small-scale sampling of opinions across a wide geographic and mission spread.